

DECLARATION UNDER 37 U.S.C. 1.132

I presently hold the position of Senior Specialist – Fiber/Yarn Processing Technologies in the Specialty Materials sector of Honeywell International Inc. I received a Bachelor of Science degree in Textile Technology from North Carolina State University and have been employed in the fiber industry for thirty-five years. Twenty-nine of those years, I have worked primarily with carpet yarn spinners and carpet manufacturers. My responsibilities include the development and evaluation of carpet yarns as well as providing technical expertise in the production of carpet yarns. I have been an invited lecturer at meetings of the American Yarn Spinners Association, the Carpet and Rug Institute, and at universities.

I have been asked to comment on the relationship of the carpet yarns of Serial Number 09/143,583 to those of Lofquist (U.S.P. 5,478,624).

I am very familiar with the carpet yarns of Lofquist. The carpet yarns of U.S.P. 5,478,624 are produced by my company and was an industry leader in residential carpet yarn during the period 1994 to 1997. I have dissected these yarns and evaluated carpets prepared from these yarns on many occasions.

The carpet yarns of Lofquist consist of carpet fibers such as nylon-6 and poly(ethylene terephthalate) (PET) locked together by heat activated binder fibers randomly positioned throughout the yarn. In contrast, the inventive carpet yarns of Serial Number 09/143,583 are comprised of carpet fibers locked together under radial constraint by heat activated binder fibers uniformly spaced and positioned around the periphery of a core strand. When the inventive yarns are subjected to heat setting temperatures sufficient to melt the heat activated binder fibers, elastic forces stored within the binder fiber are released, pulling and radially constricting the core strand. This radial constraint on the core strand provides the inventive yarn with a more resilient (stiffer) hand, a tighter more defined yarn structure and significantly greater yarn structure retention compared to the prior art Lofquist yarn.

We have prepared and evaluated many carpets comparing the inventive yarns with the prior art Lofquist yarns. Carpets prepared from the inventive yarns have shown the following advantages:

- Greater tuft definition
- More uniform tuft appearance
- Firmer carpet feel
- Greater resistance to shedding
- Superior resistance to floor wear.

The inventive yarns have also provided the ability to produce loop pile carpets from staple yarns. This had not previously been practical without radial bonding and the subsequent high levels of bonding we achieved.

I certify that all statements made in this declaration made of my own knowledge are true and all statements made on information and belief are believed to be true.

(Willfully false statements and the like are punishable by fine or imprisonment, or both [18 U.S.C. 1001] and may jeopardize the validity of the application or any patent issuing thereon.)


Charles E. Bowers
Specialty Materials
Honeywell International
Dalton, GA 30720
March 1, 2002

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I presently hold the positions of Associate Dean Academic Programs and Abel C. Lineberger Professor of Yarn Manufacturing at North Carolina State University. I have published more than 120 papers on fiber and textile technology in refereed journals and scholarly publications and have received the Warner Medal from the Textile Institute. I am a chartered associate member of the Textile Institute, and have been a member of the Textile Institute panel for "Textile Terms and Definitions".

I have been asked to comment on the term "blending" as it would be understood in the textile arts. In particular I have been asked whether the process of "blending" would be understood to include the processes of ring spinning or wrap spinning.

Blending is defined by the "Dictionary of Fiber & Textile Technology", Hoechst Celanese Corp., Charlotte, NC 1978 as "The combining of staple fibers of different physical characteristics to assure a uniform distribution throughout the yarn". A further similar definition of blending is available in "Textile Terms and Definitions" (The Textile Institute), which is "A process or processes concerned primarily with the efficient mixing of various lots of fibres. Blending is normally carried out to mix fibres, which may be of different physical properties, market values, or colours." This is a generally accepted definition. In short, blending occurs at the fiber level rather than at the yarn level and is a means of controlling the fiber composition within a yarn. On the other hand, ring spinning and wrap spinning occur at the yarn level and are means of controlling the structure of the yarn.

In my opinion, ring spinning or wrap spinning are not means of "blending" as that term would be understood by one of ordinary skill in the textile arts.

I certify that all statements made in this declaration made of my own knowledge are true and all statements made on information and belief are believed to be true.

(Willfully false statements and the like are punishable by fine or imprisonment, or both [18 U.S.C. 1001] and may jeopardize the validity of the application or any patent issuing thereon.)

William Oxenham
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March 6, 2002